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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

FOREST INSECT SURVEY
PLUMAS NATIONAL FOREST

SEASON OF 1935

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FOREST INSECT LABORATORY
BERKELEY - CALIFORNIA
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FOREST INSECT SURVEY
Plumas National Forest

Season of 1935

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FOREST INSECT SURVEY
Plumas National Forest

Season of 1935

INTRODUCTION

Since 1933, intensive forest insect surveys have been conducted annually in the Eastern Plumas Working Circle of the Plumas National Forest. These surveys, carried on by the Bureau of Entomology and Plant Quarantine, have attempted to determine the amount of loss and trends of barkbeetle infestations; to provide a basis for control recommendations; and to obtain pertinent data to be used in research on forest insect infestations.

The survey this season was curtailed to some extent by a lack of funds. A representative picture of infestation conditions in the area mentioned was secured by a minimum number of samples. Five permanent sample plots covering 1600 acres, supplemented by general observations, form the basis for the loss estimates. The survey of five cruise strips of 240 acres each was omitted from this season's program.

The survey was conducted by a three-man spotting crew during the period of September 24-29. All expenses were assumed by the Bureau of Entomology & Plant Quarantine.

GENERAL FEATURES OF THE INFESTATION

The western pine beetle, Dendroctonus brevicomis Lec., and Jeffrey pine beetle, Dendroctonus jeffreyi Hopk., continue to be the major species responsible for barkbeetle losses in ponderosa and Jeffrey pine respectively. Each of these two insect species has shown a decrease in activities over most of the working circle.

Insect losses in this area, as a whole, have diminished; particularly as to the volume of merchantable timber killed. In the northeastern portion of the area losses have increased this season. Most of this infestation is in inferior stands and therefore not to be considered of too great importance.

In ponderosa and Jeffrey pine grouping of infested trees occurred on the areas in which increasing infestations were noted; namely, Willow Creek and in the vicinity of the old Johnson sawmill. This feature is usually present during periods of epidemic conditions. Such grouping did not occur in those portions of the working circle in which 1935 losses decreased.

The losses, as given in Table I for the plots and Table II for insect control units, are high when compared to those in stands on the

west slope of the Sierras. As has been pointed out in a previous report (1/) on this area, fairly heavy losses are normal or endemic because of the critical environmental and stand conditions.

INSECT CONTROL POSSIBILITIES

There appear to be no areas within the working circle where applied control measures are warranted at the present time. Areas of heaviest infestation are in timber of poor quality where commercial values are low. Other areas show a definite tendency toward a reduction in loss with the possibility that future trends will continue in the same direction. Logging operations in the southern part of Quaw Valley will take much of the infestation centering in that unit.

INFESTATION BY UNITS

The insect control units shown on the accompanying map are based upon entomological subdivisions but correspond roughly to logging compartments. Only five of the units shown are considered in this report. Losses per unit since 1932 are shown graphically in Figure 1.

Bass Unit

The stands in this unit are chiefly pure ponderosa pine. The trees are large and of good quality. The loss for this year, estimates being based on the one plot (P-3) sampled, is slightly less than that of 1934. A decrease has occurred in the volume of the average infested tree. The infestation in this unit is endemic in nature and fairly stable.

Last Chance Unit

The 1935 loss is 28 percent higher than that of last year. Most of this increase occurs in the eastern end of the unit centering around Johnson Mill and extending south along the ridge west of Willow Creek. The remainder of the unit, roughly two-thirds, is much cleaner in appearance and has a per-section loss considerably below that given for the unit as a whole.

Ferris Unit

This unit carries a stand of mixed ponderosa-Jeffrey pine, gradually changing to pure Jeffrey pine in the south end, that is of fairly poor quality. Losses have been high in this unit since the beginning of intensive surveys three years ago. The 1935 infestation has resulted in an increase of 41 percent in the number of trees attacked but

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(1/) Salman, K. A. and Johnsen, P. C. Mss. report of U.S.B.E. & P.A. "Forest Insect Surveys, Season of 1933, Plumas National Forest," Berkeley, California, November 29, 1933.

a decrease of 5 percent in volume. This may be explained by the fact that Jeffrey pine predominates in the stands and that the average volume of infested trees of this species has shown a reduction of approximately 34 percent this year. This condition is characteristic of epidemics which have almost, or actually, reached a peak. The tendency for the group-killing of infested trees at such times results in the selection by the beetles of a larger number of intermediate trees with a corresponding reduction in the average volume per infested tree. Similar occurrences have been found this season in the Modoc and eastern Lassen national forests.

Squaw Valley Unit

During the 1935 season losses in Jeffrey and ponderosa pine have been reduced approximately 20 percent. An area south of the sample plot (P-3) in this unit bears a heavier infestation than the plot itself. This must be taken into consideration in estimating the losses per unit. The area on the southern exposure north of Squaw Queen Creek is much cleaner in appearance than the area south of the creek. The latter area is now being logged. This should eliminate some of the hazard to living timber that is presented by the center of heavier infestation.

Dixie Valley Unit

Losses have been subsiding in this unit since the flare-up in 1933. This trend continued during 1935 as shown by our estimates. Losses in the sample plot (P-4) are typical of those in the greater portion of the unit. However, a small area in the northwest corner reflects some of the trends of infestation found in the Willow Creek basin and heavier losses have occurred.

TABLE I

PLOT LOSSES - PLUMAS NATIONAL FOREST

PER SECTION BASIS

	1933			1934				1935 (Estimated)			
Plot:	Volume Trees:	B.M. Per B.M.	Acre	Volume Trees:	B.M. Per B.M.	Acre	% 1933 Infestation	Volume Trees:	B.M. Per B.M.	Acre	% 1934 Infestation
P-1	102	85,280	133.2	68	68,540	107.1	80.4	160	133,700	208.9	195.1
P-2	270	292,660	457.3	136	181,440	283.5	62.0	195	168,030	262.5	92.6
P-3	38	66,800	104.1	22	62,080	97.0	93.2	23	40,480	63.2	65.2
P-4	134	168,840	263.5	96	78,800	123.2	46.8	41	49,780	77.8	63.1
P-5	124	178,280	196.3	144	178,760	276.2	139.3	80	70,780	110.6	40.0
Average	138.4	148,000	231.2	97.2	113,636	177.4	76.7	83.8	82,550	144.6	81.5

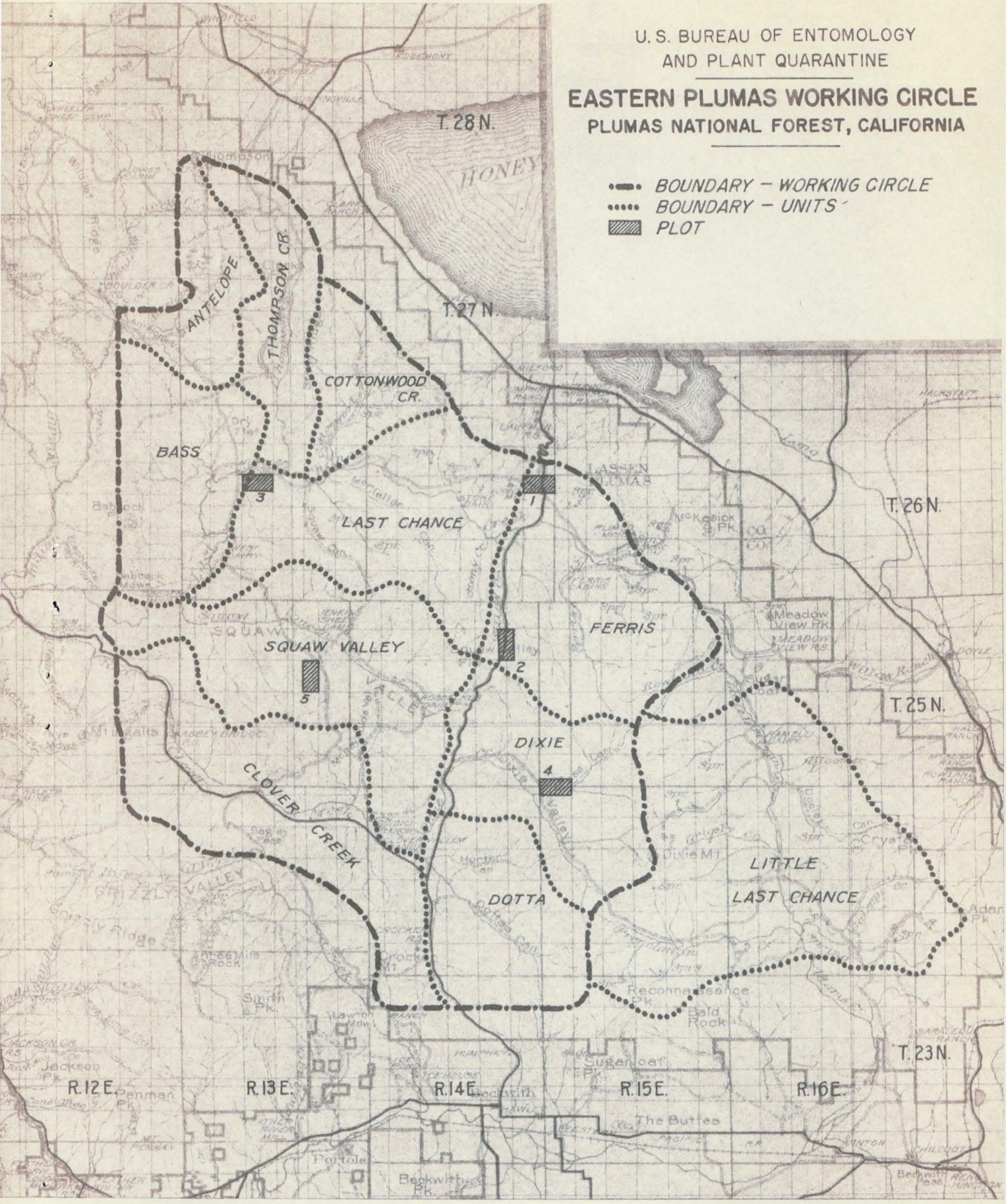
TABLE II

UNIT LOSSES

Plumas National Forest

Per Section - Per Unit Basis

Unit	Timbered Acres	1933 Losses				1934 Losses				1935 Losses (Estimated)			
		Per Section		Per Unit		Per Section		Per Unit		Per Section		Per Unit	
		Trees	Vol. B.M.	Trees	Vol. MBM	Trees	Vol. B.M.	Trees	Vol. MBM	Trees	Vol. B.M.	Trees	Vol. MBM
Bass	14,660	48	63,630	1,100	1,437	22	32,000	503	1,482	32	40,400	527	927
Last Chance	28,260	77	76,170	2,795	2,705	66	66,830	2,398	2,413	98	84,733	3,380	3,810
Ferris	19,200	130	119,040	3,900	3,595	126	158,800	3,780	4,788	178	150,868	5,340	4,628
Squaw Valley	20,230	62	63,460	1,960	2,008	108	132,570	3,413	4,191	75	106,170	2,371	3,353
Dixie Valley	16,840	100	134,830	2,490	3,357	46	78,560	2,391	1,264	66	89,428	1,644	1,731
Totals	99,190		12,245	13,170			12,486	14,756			13,262	14,359	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EASTERN PLUMAS WORKING CIRCLE
PLUMAS NATIONAL FOREST, CALIFORNIA
BOUNDARY – WORKING CIRCLE
BOUNDARY – UNITS
PLOT
T. 28 N.
T. 27 N.
T. 26 N.
T. 25 N.
T. 23 N.
R. 12 E.
R. 13 E.
R. 14 E.
R. 15 E.
R. 16 E.
ANTELOPE
THOMPSON CR.
COTTONWOOD CR.
BASS
LAST CHANCE
SQUAW VALLEY
FERRIS
DIXIE
CLOVER CREEK
DOTTA
LITTLE LAST CHANCE
1
2
3
4
5

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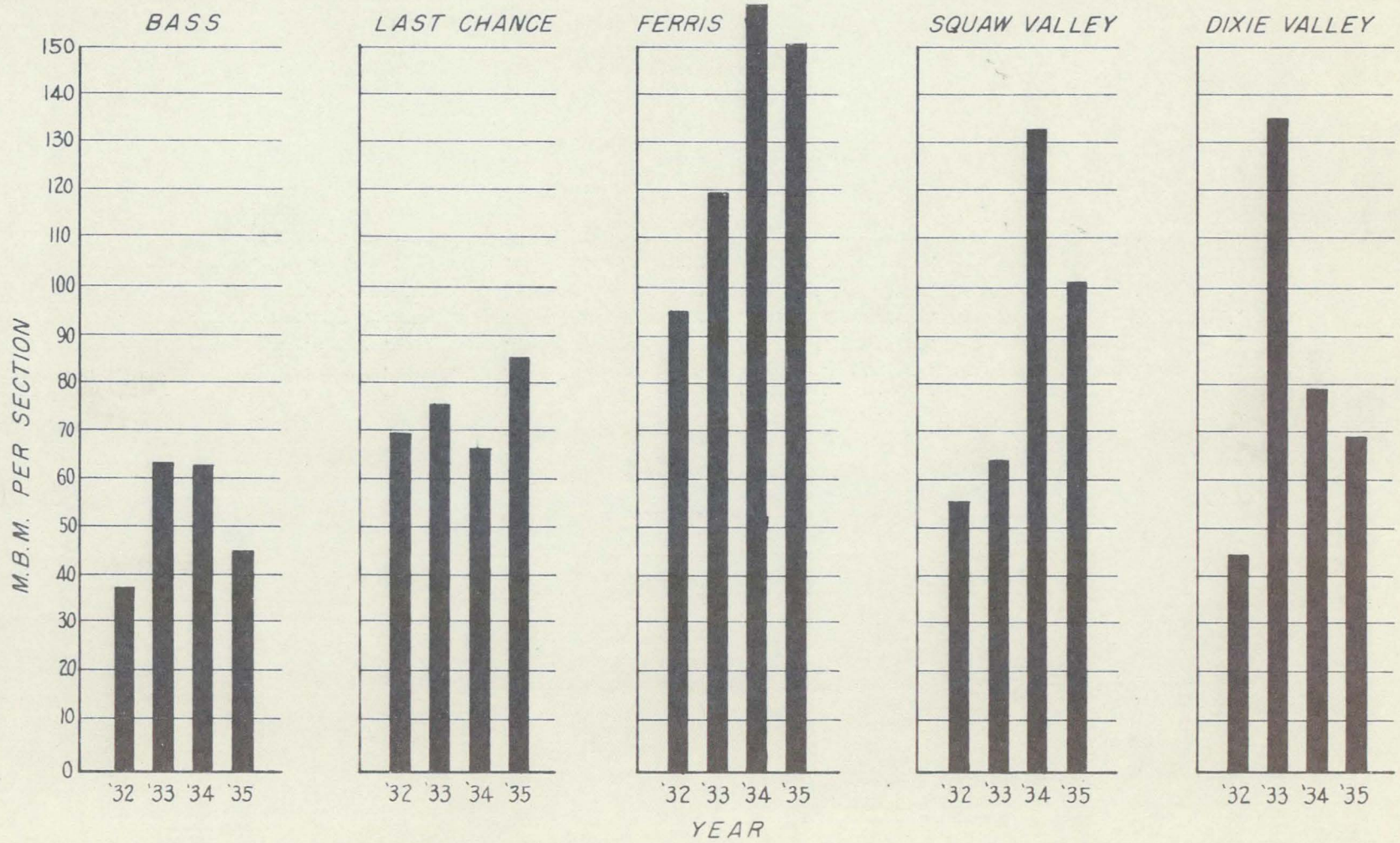
INSECT LOSSES

1932 – 1935

EASTERN PLUMAS WORKING CIRCLE

PLUMAS NATIONAL FOREST, CALIFORNIA



ANNUAL M.B.M. LOSSES PER SECTION BY UNITS